

Before the  
**FEDERAL COMMUNICATIONS COMMISSION**

Washington, D.C. 20554

In the matter of	)	
	)	
Allocation of Spectrum Below	)	ET Docket No. 94-32
5 GHz Transferred From Federal	)	
Government Use	)	

To: The Commission

**REPLY COMMENTS  
OF  
METRICOM, INC.**

Metricom, Inc. ("Metricom"), by its attorneys, pursuant to Section 1.415 of the Commission's Rules and the Notice of Inquiry issued in the above-styled proceeding, hereby respectfully submits these Reply Comments. Metricom submits that the Commission must continue its policy of encouraging the development and proliferation of Part 15 spread spectrum devices in the 2400-2483.5 MHz frequency band (the "2.4 GHz band"). Applications using Part 15 devices promote significant public interest considerations. Accordingly, this commitment to Part 15 spread spectrum applications must be protected. No new uses of the band should be authorized which would interfere with, or receive interference from, spread spectrum devices.

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1. Metricom manufactures Part 15 frequency hopping, spread spectrum, wireless data communications systems currently operating pursuant to Section 15.247 of the Commission's rules in the 902-928 MHz frequency band.<sup>1/</sup> As the Commission is aware, Section 15.247 also provides for spread spectrum operations in the 2.4 GHz band, which includes the 2402-2417 MHz band that NTIA proposes to "transfer" to the private sector.<sup>2/</sup> Metricom is vitally concerned with future, unlicensed, spread spectrum operations and the many benefits such operations provide in the public interest. Metricom joins the numerous parties who urge the Commission to maintain this band for meaningful Part 15 operations.<sup>3/</sup>

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<sup>1/</sup> Metricom's systems provide an innovative mesh network architecture which offers the first license-free wireless solution to provide low cost, high speed, flexible, regional data communications for a wide variety of applications that serve the public interest. Part 15 of the rules provides the opportunity to make use of the available frequency spectrum to develop high-performance, large capacity, low-cost and reliable radio equipment and services in the public interest.

<sup>2/</sup> See 47 C.F.R. § 15.247; Notice of Inquiry In the matter of Allocation of Spectrum Below 5 MHz Transferred From Federal Government Use, 59 Fed. Reg. 25589 (May 17, 1994).

<sup>3/</sup> See, e.g., Comments of Apple Computer, Inc. ("Apple"), The Part 15 Coalition, Symbol Technologies, Inc. ("Symbol"), American Telephone and Telegraph Co. ("AT&T"), Itron, Inc. ("Itron"), Western Multiplex Corporation, The Mobile and Personal Communications Division and the Point-To-Point Communications Section of the Telecommunications Industry Association ("TIA"), InterDigital Communications Corp., GEC Plessy, American Petroleum Institute ("API"), Utilities Telecommunications Council, The Southern Company.

2. Aside from the applications provided by Part 15 devices manufactured by others,<sup>4/</sup> Metricom's Part 15 devices contribute to less expensive electricity, reduced pollution, fuel conservation, improved handling of waste water, monitoring of gas wells, assistance in health care, education, manufacturing, and personal data communications. No other communication medium available today has the ability to provide this breadth of services with the same cost/value relationship. To limit the usefulness of Part 15 devices would be to seriously impact the public interest on a broad scale. In addition, any restrictions on spread spectrum operations will interfere with, and seriously reduce, the development of new technology, economic growth and competition.<sup>5/</sup>

3. The FCC has encouraged Part 15 spread spectrum operations and recognized that use of the 2.4 GHz band is likely to increase in the future.<sup>6/</sup> As was pointed out in the Comments, because Section 15.5 of the rules prohibits Part 15 devices from causing interference to authorized services and requires Part 15 devices to accept interference, Part 15 provides services with well-engineered and robust equipment that require minimal FCC regulation and

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<sup>4/</sup> See Symbol Comments at pp. 2-5, illustrating the important contributions of spread spectrum operations in the public interest.

<sup>5/</sup> Western Multiplex Comments at p. 6.

<sup>6/</sup> Notice of Inquiry at ¶ 6, n.14, see, also, Comments of Symbol at pp. 8-9.

oversight.<sup>7/</sup> This has led to a great variety of services where technological innovations truly take priority over regulatory actions, where technological advances can be implemented without regulatory delay, and where the best equipment will continue to operate. Thus, the public and FCC are very well served by the Part 15 regulatory paradigm.<sup>8/</sup>

4. Due to the sharing required, the 902-928 MHz band for spread spectrum operations is becoming increasingly congested; for most Part 15 applications, the future is terribly uncertain because of the pendency of the AVM proceeding.<sup>9/</sup> As increased sharing requirements are imposed on the 902-928 MHz band and the band becomes increasingly congested -- or unusable for spread spectrum operations -- the next logical location for spread spectrum operations is the 2.4 GHz band. No other attractive alternatives are available. It must be noted that even though the Commission recently allocated new spectrum for Unlicensed PCS, because of the

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<sup>7/</sup> See, e.g., Symbol Comments at pp. 5-6.

<sup>8/</sup> Id.

<sup>9/</sup> Notice of Proposed Rule Making In the Matter of Amendment of Part 90 of the Commission's Rules to Adopt Regulations for Automatic Vehicle Monitoring Systems, P.R. Docket No. 93-61, 8 FCC Rcd. 2502 (1993). The band may even become unusable for spread spectrum operations as a result of this proceeding. See Comments of Itron, p. 2.

spectrum etiquette adopted, spread spectrum operations can not be accommodated in the unlicensed PCS spectrum.<sup>10/</sup>

5. The Commission's goals in this proceeding, as expressed at ¶ 1 of the Notice of Inquiry, to have the newly allocated spectrum contribute to the increased efficiency and productivity in the nation, as well as to promote wireless access to the National Information Infrastructure ("NII"), are **already being served** by the operation of Part 15 spread spectrum devices.<sup>11/</sup> It would, therefore, be counter-productive to disturb the current Part 15 allocation in the 2.4 GHz band, or render it unworkable. Current allocations are serving precisely the goal the Commission wishes to attain, and the band is heavily used at this time. Additional licensed operations in the band would not achieve the Commission's goals without displacing current users of the band for no discernable reason.

6. In addition, it appears that there is a serious question as to whether the reallocation of the 2402-2417 MHz band meets the requirements of Title VI of the Omnibus Budget Reconciliation Act

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<sup>10/</sup> Memorandum Opinion and Order In The Matter of Amendment of the Commission's Rules to Establish New Personal Communications Services, Gen. Docket No. 90-314, FCC 94-144 (rel. June 13, 1994) at ¶¶ 224-244 and § 15.301 et seq.

<sup>11/</sup> See ¶ 2 and n.4, supra, API Comments at pp. 16-17, n.18 (noting that the 2.4 GHz band should not be disturbed because the devices currently operating therein "provide critical links and their reliability and ease of use provide a valued service that should not be disturbed.")

of 1993<sup>12/</sup> Act because the band is **already** heavily used for **non-federal** operations.<sup>13/</sup> The allocation proposed by the NTIA furthers neither the goals of Congress in directing that federal spectrum be released, nor the goals of the FCC that the newly allocated spectrum contribute to increased efficiency and productivity in the nation. Therefore, Metricom endorses the proposal of TIA that the FCC should work with NTIA to find substitute spectrum.<sup>14/</sup> Alternatively, the FCC must take steps to assure that spread spectrum operations will not be disturbed and will be allowed to develop to their full potential.

7. Finally, Metricom feels compelled to respond to the Comments of APCO wherein it was alleged that the 2402-2417 band is too valuable to be left to the near exclusive use of microwave ovens.<sup>15/</sup> Obviously, as the record clearly demonstrates in this proceeding, APCO is plainly wrong in its assertion. There are many valuable uses of this frequency band, in addition to microwave oven usage, that clearly serve the public interest.<sup>16/</sup> APCO's attempt

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<sup>12/</sup> Pub. L. No. 103-66, §6001, 107 Stat 312, 379-401 (1993), to be codified at 47 U.S.C. §§ 111-117.

<sup>13/</sup> TIA Comments at pp. 11-13, Apple Comments at pp. 2-3.

<sup>14/</sup> TIA Comments, p.2.

<sup>15/</sup> APCO Comments at p.7.

<sup>16/</sup> See ¶ 2 and n.4, supra; see, also, Comments of Apple and InterDigital concerning many newly proposed Part 15 products under development for the 2.4 GHz band. It should also be noted that in addition to ISM equipment, Amateur Radio uses the spectrum and has specific plans to expand that use. American Radio Relay League ("ARRL") Comments at pp. 9-12.

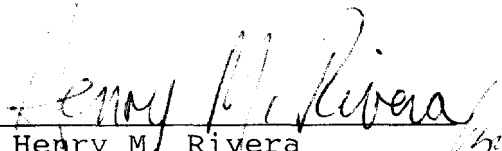
to trivialize the use of the 2402-2417 MHz frequency band is meritless and the Commission should disregard the assertion.

WHEREFORE, the premises considered, the Commission is respectfully requested to insure the integrity of spread spectrum operations in the 2.4 GHz frequency band, and to take further action in accordance with the views expressed herein.

Respectfully submitted,

METRICOM, INC.

By:

  
Henry M. Rivera  
Larry S. Solomon  
GINSBURG, FELDMAN & BRESS, CHTD.  
1250 Connecticut Ave., N.W.  
Washington, D.C. 20036  
Telephone: 202-637-9000

ITS ATTORNEYS

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